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ENVIRONMENTAL IMPACT STATEMENT

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Pursuant to: Montana Environmental Policy Act
Section 69-6504 (b) (3)

Project No. FG-15

Removal of Hungry Horse Creek Experimental Fish Trap

April 27, 1972

Prepared by

Montana Fish and Game Department
Fisheries Division
Helena, Montana

Removal of the Hungry Horse Creek Experimental Fish Trap

Environmental Impact Statement

I. Purpose of the Project.

The Hungry Horse Creek fish trap has been in operation each spring and summer since 1965. The purpose of the trap was to obtain data about the spawning and rearing phases of adfluvial westslope cutthroat trout spawning in this stream. The parent body of water for the spawning run is Hungry Horse Reservoir. The purpose of this project is the removal of this upstream-downstream velocity barrier trap in such a manner as not to obstruct free passage of adult or juvenile fish moving in the creek and so that the trap system can be replaced with a minimum of disturbance to the stream.

II. Description of the Trap Removal.

The fish trap is comprised of two main parts: a bypass channel and a velocity barrier. The bypass channel averages 15 feet in width and has a concrete inlet headgate with two five-foot openings. The bottom elevation of the headgate is about 0.7 foot above the elevation of the velocity barrier concrete apron.

The velocity barrier consists of a 20-foot-long, wooden dam which raises the elevation of the creek channel 3.5 feet, a spillway eight feet long and two concrete aprons. The area beneath the spillway is filled with rock and rock-filled gabions. The first eight-foot long apron is concrete poured over rock-filled gabions recessed 0.5 feet below the original streambottom. The second eight-foot apron is built of soil concrete about 0.3 feet thick. The lower edge of the second apron has a raised lip to reduce hydraulic forces below the apron.

The velocity barrier abutments are concrete structures toed into the stream bank on the south bank and into a divider wall between the main creek and bypass channel on the north bank. The divider wall between the velocity barrier and the upper 40 feet of the bypass channel consists of rock filled 1 x 1 x 3 meter gabions stacked two high with the lower level capped with concrete. The total weight of this divider wall is estimated at about 90,000 pounds. The south abutment of the bypass headgate is toed into the divider wall while the north bypass abutment has batwings toed into the earth bank.

The velocity barrier dam is constructed of wood and consists of two 4 x 4 timber mud sills as the lowest support. Divider walls are attached by log bolts to the upper and lower mud sills every eight feet dividing the velocity barrier into five eight foot sections, and to provide support for the dam stop logs. The stop logs are 2 x 12 larch boards set on edge.

This project proposes to remove the wood velocity barrier and the rock material beneath the spillway. The concrete aprons will be left in place. The upper and lower mud sills will be cut about 1.0 feet out from the abutments and all wood removed. Rock and rock filled gabions will be removed from beneath the spill way.

Rock and gravel removed from beneath the spillway will be used to stabilize areas of stream erosion caused by high velocity flows below the second apron. Wood removed will be piled on a flat near the creek, left over winter to dry and then burned the next spring. This lumber has been alternately wet and dry or completely wet for several years and could serve no useful purpose. An estimated 30 to 40 yards of bed load material has settled in the dam impoundment area. This material stream gravel will not be removed but will be allowed to move downstream during the 1973 high water.

Removal of the velocity barrier is tentatively scheduled for late October or November, 1972. Stream flow is expected to be less than five cfs and it can be diverted through the bypass channel. All work will be done in the dry and no pollution of the stream should result.

Removal of the velocity barrier will return the creek to its original channel and will have approximately the same width and depth. Leaving the concrete aprons in place will have no more effect than bed-rock slabs extending across the creek and should aid in stream stability. The lip on the second apron will be eliminated and the areas immediately below armoured to prevent erosion.

Trout moving up Hungry Horse Creek are expected to pass through the area easily even with 16 feet of concrete apron left in place. Fish can pass upstream though the main channel or through the bypass channel. The bypass channel headgate will be left intact and open. The headgate is about 0.7 feet higher than the dam apron so only a part of the stream flow during flood periods will flow here.

If it is needed in future years, replacement of the trap should be a simple inexpensive operation. A new trap foundation could be tied to the stubs of the mud sills left protruding. Trap reconstruction could be done when the creek is low and could be diverted through the bypass channel. Cost of installing a completely new trap including divider walls, abutments, headgates, and other necessary items would cost about $6,000 at the present time. Cost of reinstallation of the velocity barrier dam is estimated to cost about 1,000.

III. Description of Existing Environment

A. Human Resources - Human resources include the public recreating in the Hungry Horse Creek drainage. This stream is one of the most heavily fished tributaries of Hungry Horse Reservoir.

B. Physiography and Geology - The question is non-appliciable. The area described in this project includes a section of Hungry Horse Creek about 150 feet long.

C. Land Use - Montana Fish and Game Department holds a Special Use Permit from Flathead National Forest covering the area around the trap. Terms of this permit include that the only use be for scienfic purposes, for the period of March 6, 1969 through March 5, 1979.

D. Fish and Wildlife - Wildlife around the fish trap area include those species assoicated with northwestern Montana. Fish species present in the creek include adfluvial westslope cutthroat trout, mountain whitefish and Dolly Varden. Largescale suckers from Hungry Horse Reservoir spawn in the stream below the trap. The primary use of this drainage is for spawning and rearing by adfluvial cutthroat trout.

E. Vegetative Resources - Vegetation around the trap area include grasses, willows and alders, and coniferous trees.

F. Climate - Climate is typical of that found in the South Fork Flathead River drainage.

IV. Evaluation of Environment Impact

A. Impact of Proposed Action - The impact of the proposed trap removal should have no adverse effect upon the fishery of Hungry Horse Creek. Removal of the trap will eliminate an un-natural barrier facing the annual spawning run and the added stresses caused by handling adult and juvenile fish moving up or down the drainage. About 200 feet of Hungry Horse Creek above and below the trap are closed to angling at the present time. The trap was built in an area

in which fish rested and concentrated after entering the stream from the reservoir. An area around the trap including these resting sites was closed to all angling during the years of trap operation.

B. Unavoidable Effects of the Proposed Project - There are no unavoidable effects of this project.

C. Alternatives - Alternatives to this proposal area: (1) remove all the trap system or (2) leave the trap system as it now stands. Removal of the entire trap system would be a time-consuming project, costly and have potential for greater damage to the stream in the project area. Reinstallation of this experimental trap at some future date would also be much more expensive, time consuming, and disruptive to the environment.

The removal of the Hungry Horse Creek trap after 1972 trap season was scheduled in 1970 plans. Extension of the project indefinitely would be very unwise use of time and money. Leaving the trap in place without operating it would be disastrous to the spawning runs entering this drainage. The trap will not pass fish upstream without help.

D. Short-term-Long-term Use - Not applicable.

E. Irreversible and Irretrievable Committment of the Resource - No irreversible or irretrievable committment will be made by this trap removal project.

F. Discussion of Problems and Objections by Other Agencies - No objections by other agencies are foreseen. The Flathead National Forest is in agreement with the plan of removal.

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